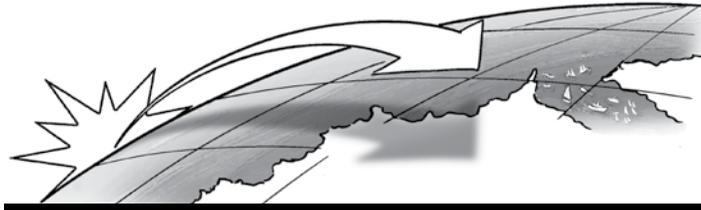


# Tsunami Awareness for Fishermen and Mariners



**F**ishermen and other mariners have special concerns when preparing for earthquakes and tsunamis. Sometimes valuable boats can be moved to a safer area upriver or at sea, but at other times it can be extremely dangerous being anywhere near your vessel. The key to knowing what to do in your particular situation is to understand the two different kinds of tsunamis: (1) those generated by distant earthquakes and (2) those generated by a large local earthquake.



## DISTANT EARTHQUAKE

### *What Happens?*

An earthquake somewhere along the Pacific Rim generates a significant tsunami. Buoys and sensors detect the wave and indicate the wave's size, direction, and speed. Warnings are given via emergency systems and NOAA All Hazards radios. How much time coastal residents have before the tsunami hits depends on how far away the earthquake occurred. Alaska is the most likely source of this kind of tsunami on the west coast. The 1964 earthquake in Alaska generated a tsunami that took four hours to reach Oregon. A tsunami generated in Japan takes about 10 hours to get here. Tsunamis coming from far away typically lose most of their size but they remain dangerous and can still cause damage in the inundation zone. Damage from distant tsunamis is typically limited and localized. However, damage varies greatly among different ports along the coast due to the unique features of the local sea floor.

### *What Should You Do?*

**At sea:** If you're at sea and learn of an approaching tsunami, head for a depth of 50 fathoms or greater and monitor your radios for specific instructions from port authorities or the Coast Guard. Consider that you will be at sea for an extended period of time. Tsunamis of varying size continue for up to 12 hours. Carefully manage all fuel, water, and other essentials. Port and marina facilities may be damaged upon return. If you're in a smaller boat with a trailer in the marina, estimate how much time you have before the first wave strikes and consider the facilities and circumstances at the local port or marina. You may choose to return to port if you think you can get hauled out before the tsunami strikes.

**In port:** Your choices are to haul-out and leave, leave your boat moored and evacuate the inundation zone, anchor upriver, or cross the bar and go out to sea. The four factors in your decision should be the length of time before the tsunamis strike, local ocean and river characteristics, car and boat traffic, and the speed at which your vessel can travel. If possible, simply haul out your boat and leave the inundation zone. Or, leave your boat moored and leave the inundation zone. (Understand that marinas and boats may be damaged.) If you're on your boat, you can seek refuge upriver as far as possible. If you remain on the water, carefully manage all fuel, water, and other essentials. Expect to be unable to return to port for up to 12 hours.

**At home:** Warnings on NOAA radios and other media will alert you about the tsunami and report an estimated time of arrival. If you live in an inundation zone, you need to evacuate the zone for 12 hours. If you do not live in an inundation zone, you can stay put. If you choose to deal with your boat at a marina, understand that you will be driving into an inundation zone under snarled traffic conditions and widespread confusion. Once aboard you'll need to negotiate heavy boat traffic and disarray in the marina, and on the river. Be realistic about how long it will take to prepare your boat amidst the chaos. If you do go to your boat, remember that most marinas are in inundation zones, so be sure to park your vehicle on high ground.

### *Other Considerations for a Distant Earthquake*

- Landlines and cell phone lines will be overloaded. Traffic will be snarled.
- You will need to find a place to stay outside of the inundation zone for 12 hours. The initial waves will be followed by others.
- Identify the location of inundation zones near your favorite boat ramps, marinas, and access roads. Inundation maps are available at city halls and fire stations along the coast.



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## LOCAL EARTHQUAKE

### **What Happens?**

A large earthquake strikes along the Cascadia Subduction Zone (CSZ), 60 to 100 miles offshore. You will have no question that it is the Big One. On land, intense shaking and earth movement will occur for four to six minutes, causing widespread destruction to structures, bridges, and roads. The displacement of the Earth's crust under the seafloor generates a huge surge of ocean water—a tsunami. As the tsunami reaches shallower water, the waves rise up and surge onshore. It takes between 15 and 25 minutes for a CSZ-generated tsunami to reach the Oregon coast. Several large deadly waves can appear for up to 12 hours. Aftershocks can start submarine landslides and generate additional waves. It is estimated that there is a one-in-five probability that a CSZ earthquake will occur within the next 50 years.

### **What Should You Do?**

**At sea:** If you're at sea, you're lucky. Head for a depth of 50 fathoms or greater and monitor your radios for specific instructions from port authorities or the Coast Guard. Consider that you will be at sea for an unknown amount of time. Carefully manage all fuel, water, and other essentials. Your vessel may be essential in rescue and response efforts upon return. When you return, expect dangerous debris in the water, limited facilities, and destruction from the both the earthquake and the tsunami.

**In port:** Most ports are in areas with fill material and soil types that make the local impact worse. The Big One will be devastating. You need to duck, cover, and hold on until it ends. After the shaking, you will have

15 to 25 minutes to get to a site 50 feet above sea level. Do not return to or travel through the inundation zone for 12 hours. If you are just under way or in the bay, you won't have time to get to 50 fathoms at sea. Your choice is to run aground and get to high land, or speed upriver. If you do go upriver, expect heavy boat traffic, huge ocean surges, and lots of debris. Several large deadly waves can appear for up to 12 hours. In either case, find shelter and aid in rescues and recoveries if you can.

**At home:** Duck, cover yourself from falling debris, and hold on tight until the shaking ends. After the shaking, you will have 15 to 25 minutes to get to a site 50 feet above sea level (if you are already above 50 feet, stay put). Stay there and help with rescues and recoveries. Do not go back into an inundation zone to check on your family or boat for 12 hours.

### **Other Considerations for a Local Earthquake:**

- Landlines and cell phone lines will be dead or jammed, but satellite phones will work.
- Roads and bridges will be damaged and destroyed. Widespread landslides will close all highways. Expect to travel on foot.
- Expect to be on your own without any professional help or outside rescue for several days. Food and potable water will be in short supply. Structural fires will be widespread. Aftershocks will be common.
- Keep up on your insurance and know your coverage. Keep your insurance papers in a safe place, which may be in the safety deposit box of a bank outside of the inundation zone.



## FAMILY COMMUNICATION PLAN

Even more than your boat, you will be concerned for your family and crew in the case of a local event. Have a prior understanding among the people you care for about what to do following a disaster. Review with them the difference between a distant event and a local tsunami and what to do under each scenario. Understand that after the Big One you will likely be separated from family members for days. Have a common phone contact out of state for family members to call as soon as they can. Gain peace of mind by knowing that everyone you care for knows what to do to maximize their safety during the event and how to reconnect afterwards.

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